

Amendment Dated April 14, 2004

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (currently amended) Cable [(1)] comprising:  
an outer protective sheath [(2)] and optical means for monitoring temperature and strain,  
said optical means being within said outer protective sheath [(2)] and [comprising:]  
having
  - a first tube [(4)] including at least a first optical fibre [(8)] in order to monitor the temperature, said first optical fibre [(8)] being loose in said first tube [(4)] and comprising at least one reflecting section called Bragg grating [(16),] ; and
  - at least a second optical fibre [(7)] including at least one Bragg grating [(16)] in order to monitor the strain, wherein in  
said cable, [(1) being characterized in that] said second optical fibre [(7)] is outside said first tube [(4)], said optical means further comprising means [(6)] for tightening said second optical fibre [(7)].
2. (currently amended) Cable [(1)] according to claim 1 [characterized in that] wherein said second optical fibre [(7)] is centrally located along the longitudinal axis of said cable [(1)].

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3. (currently amended) Cable [(1)] according to claim 1 [or claim 2 characterized in that] wherein said first optical fibre [(8)] has an excess length in said first tube [(4)].
4. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 3 characterized in that] wherein said first tube [(4)] is stranded.
5. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 4 characterized in that it comprises] further comprising a stranded layer including a plurality of strands [(3, 4)], one of said strands being said first tube [(4)].
6. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 5 characterized in that] wherein said first tube [(4)] comprises a plurality of optical fibres.
7. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 6 characterized in that] wherein said means for tightening said second optical fibre [(7)] are a second tube [(6)] separated from said first tube [(4)].
8. (currently amended) Cable [(1)] according to claim 7 [characterized in that] wherein said second tube [(6)] comprises a plurality of optical fibres.

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9. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 6 characterized in that] wherein said means for tightening said second optical fibre are a coating layer surrounding tightly said second optical fibre in order to form a tight buffered fibre.
10. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 9 characterized in that] wherein at least one of said first or second optical fibre [(8, 7, F)] comprises a plurality of Bragg gratings [(16)] disposed at different locations along the length of said first or second optical fibre, each of them corresponding to a monitoring spot.
11. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 10 characterized in that] wherein said means for tightening said second optical fibre are surrounded by a protective jacket.
12. (currently amended) Cable [(1)] according to [any one of] claim[s] 5 [to 11 characterized in that] wherein one of said strands [(3, 4)] is a strength member [(3)].
13. (currently amended) Cable [(11)] according to [any one of] claim[s] 5 [to 12 characterized in that] wherein one of said strands is a conductor [(13)].
14. (currently amended) Cable [(1)] according to [any one of] claim[s] 1 [to 13 characterized in that] wherein at least one of said first or second tube [(4, 6)] is made of metal.